

GENES ENCODING PROTEINS WITH PESTICIDAL ACTIVITY

ABSTRACT OF THE DISCLOSURE

5 The invention provides nucleic acids, and variants and fragments thereof,
obtained from strains of *Bacillus thuringiensis* encoding δ -endotoxins having pesticidal
activity against insect pests. The invention further provides mutagenized nucleic acids
that have been modified to encode pesticidal polypeptides such as endotoxins having
improved pesticidal activity and/or altered pest specificity. Particular embodiments of
10 the invention provide isolated nucleic acids encoding pesticidal proteins that may be
optimized as well as pesticidal compositions, expression cassettes, and transformed
microorganisms and plants comprising a nucleic acid of the invention. These
compositions find use in methods for controlling pests, especially plant pests.

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